What is claimed is:

## 1. A compound of the formula (I):

$$R^2$$
 $R^3$ 
 $R^3$ 
 $R^3$ 
 $R^3$ 
Formula I

## 5 wherein

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R<sup>1</sup> is selected from the group consisting of: H, alkyl, alkenyl, alkynyl, haloalkyl, haloalkenyl, heteroalkyl, cycloalkyl, cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, heteroarylalkyl, arylalkenyl, cycloalkylheteroalkyl, arylheteroalkyl, heterocycloalkylheteroalkyl, heteroarylheteroalkyl, hydroxyalkyl, alkoxy, alkoxyalkyl, alkoxyaryl, alkenyloxy, alkynyloxy. cycloalkylkoxy, heterocycloalkyloxy, aryloxy, heteroaryloxy, arylalkyloxy, amino, alkylamino, aminoalkyl, acylamino, arylamino, phenoxy, benzyloxy, COOH, alkoxycarbonyl, alkylaminocarbonyl, sulfonyl, alkylsulfonyl, alkylsulfinyl, arylsulfonyl, arylsulfinyl, aminosulfonyl, SR4 and acyl, each of which may be unsubstituted or substituted with one or more substituents independently selected from the group consisting of: halogen, =O, =S, -CN, -NO2, -CF3, -OCF3, alkyl, alkenyl, alkynyl, haloalkyl, haloalkenyl, haloalkynyl, heteroalkyl, cycloalkyl, cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl, hydroxy, hydroxyalkyl, alkoxyalkyl, alkoxyaryl, alkoxyheteroaryi, alkenyloxy, alkynyloxy, cycloalkyloxy, cycloalkenyloxy, heterocycloalkyloxy, heterocycloalkenyloxy, aryloxy. heteroaryloxy, arylalkyl, heteroarylalkyl, arylalkyloxy, -amino, alkylamino, acylamino, aminoalkyl, arylamino, sulfonyl, alkylsulfonyl, arylsulfonyl, arylsulfinyl, aminosulfonyl, aminoalkyl, alkoxyalky, -COOH, -C(O)OR5, -COR5, -SH, -SR6, -OR6 and acyl: or  $R^1 = L$ ;

R<sup>2</sup> is selected from the group consisting of: H, halogen, alkyl, alkenyl, alkynyl, haloalkenyl. heteroalkyl, cycloalkyl, haloalkyl. cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, heterocycloalkylheteroalkyl, heteroarylalkyl, arylalkenyl. cycloalkylheteroalkyl, heteroarylheteroalkyl, arylheteroalkyl hydroxy, hydroxyalkyl, alkoxy, alkoxyalkyl, alkoxvarvi. alkenyloxy, alkynyloxy, cycloalkylkoxy, heterocycloalkyloxy, heteroaryloxy, arylalkyloxy, amino, alkylamino, aminoalkyl, acylamino, arylamino, phenoxy, benzyloxy, COOH, alkoxycarbonyl, alkylaminocarbonyl, sulfonyl, alkylsulfonyl, alkylsulfinyl, arylsulfonyl, arylsulfinyl, aminosulfonyl, SR5 and acyl, each of which may be

unsubstituted or substituted with one or more substituents independently selected from the group consisting of: halogen, =O, =S, -CN, -NO2, -CF3, -OCF3, alkyl, alkenyl, alkynyl, haloalkyl, haloalkenyl, haloalkynyl, heteroalkyl, cycloalkyl, cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl, hydroxy, hydroxyalkyl, alkoxyalkyl, alkoxyaryl, alkoxyheteroaryl, alkenyloxy, alkynyloxy, cycloalkyloxy, cycloalkenyloxy, heterocycloalkenyloxy, heterocycloalkyloxy, aryloxy, heteroaryloxy, arylalkyl, heteroarylalkyl, arylalkyloxy, -amino, alkylamino, acylamino, aminoalkyl, arylamino, sulfonyl, alkylsulfonyl, arylsulfonyl, aminosulfonyl, aminoalkyl, alkoxyalky, -COOH, -COR5, -C(O)OR<sup>5</sup>, -SH, -SR<sup>5</sup>, -OR<sup>6</sup> and acyl;

10 or  $R^2 = L$ ;

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R<sup>3</sup> is selected from the group consisting of H, C<sub>1</sub> -C<sub>6</sub> alkyl, and acyl; or a metal ion selected from sodium, calcium, magnesium;

X and Y are the same or different and are independently selected from the group consisting of: H, halogen, -CN, -NO2, -CF3, -OCF3, alkyl, alkenyl, alkynyl, haloalkyl, haloalkynyl, heteroalkyl, cycloalkyl, cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl, hydroxy, hydroxyalkyl, alkoxyalkyl, alkoxyalkyl, alkoxyaryl, alkoxyheteroaryl, alkenyloxy, alkynyloxy, cycloalkyloxy, cycloalkenyloxy, heterocycloalkyloxy, heterocycloalkenyloxy, aryloxy, heteroaryloxy, arylalkyl, heteroarylalkyl, arylalkyloxy, -amino, alkylamino, acylamino, aminoalkyl, arylamino, sulfonyl, alkylsulfonyl, arylsulfonyl, aminosulfonyl, aminoalkyl, alkoxyalky, -COOH - $C(O)OR^5$ , - $COR^5$ , -SH, - $SR^6$ , - $OR^6$  acyl and - $NR^7R^8$ ;

Each R<sup>4</sup> is selected from the group consisting of: H, alkyl, alkenyl, alkynyl, haloalkyl, heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, heteroarylalkyl and acyl:

Each R<sup>5</sup> is independently selected from the group consisting of: alkyl, alkenyl, alkynyl, haloalkyl, heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, heteroarylalkyl and acyl;

Each R<sup>6</sup> is independently selected from the group consisting of: alkyl, alkenyl, alkynyl, haloalkyl, heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, heteroarylalkyl and acyl;

Each R<sup>7</sup> and R<sup>8</sup> are each independently selected from the group consisting of: H, alkyl, alkenyl, alkynyl, haloalkyl, heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, heteroarylalkyl and acyl;

L is selected from the group consisting of:

a) 
$$L=Cy-L^1-W$$

Wherein

Cy is C<sub>1</sub>-C<sub>15</sub> alkyl, aminoalkyl, heterocycloalkyl, cycloalkyl, aryl, aryloxy or heteroaryl any of which may be optionally substituted one or more substituents independently selected from the group consisting of: halogen, =O, =S, -CN, -NO<sub>2</sub>, -CF<sub>3</sub>, -OCF<sub>3</sub>, alkyl, alkenyl, alkynyl, haloalkyl, haloalkenyl, haloalkynyl, heteroalkyl, cycloalkyl, cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl, hydroxy, hydroxyalkyl, alkoxy, alkoxyalkyl, alkoxyaryl, alkoxyheteroaryl, alkenyloxy, cycloalkyloxy, cycloalkenyloxy, heterocycloalkyloxy, alkynyloxy, heterocycloalkenyloxy, aryloxy, heteroaryloxy, arylalkyl, heteroarylalkyl, arylalkyloxy, -amino, alkylamino, acylamino, aminoalkyl, arylamino, sulfonyl, alkylsulfonyl, arylsulfonyl, aminosulfonyl, aminoalkyl, alkoxyalky, -COOH, -C(O)OR5, -COR5, -SH, -SR6, -OR6 and acyl.

 $L^1$  is selected from the group consisting of  $C_1 - C_5$  alkyl, which may be optionally substituted with one or more substituents independently selected from the group consisting of: halogen; =0; =S; -CN; -NO<sub>2</sub>; alkyl, alkoxy, acylamino, and alkylamino;

W is selected from the group consisting of a single bond, -O-, -S-, -S(O)-, -S(O)<sub>2</sub>-, -N(R<sup>9</sup>)-, -C(O)N(R<sup>9</sup>)-, -SO<sub>2</sub>N(R<sup>9</sup>)-, N(R<sup>9</sup>)C(O)-, N(R<sup>9</sup>)SO<sub>2</sub>-, and -N(R<sup>9</sup>)-C(O)-N(R<sup>10</sup>)-;

b)  $L=Cy-L^1-W-L^2$ 

Wherein,

Cy is C<sub>1</sub>-C<sub>15</sub> alkyl, aminoalkyl, heterocycloalkyl, cycloalkyl, aryl, aryloxy or heteroaryl any of which may be optionally substituted one or more substituents independently selected from the group consisting of: halogen, =O, =S, -CN, -NO<sub>2</sub>, -CF<sub>3</sub>, -OCF<sub>3</sub>, alkyl, alkenyl, alkynyl, haloalkyl, haloalkenyl, haloalkynyl, heteroalkyl, cycloalkyl, cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl, hydroxy, hydroxyalkyl, alkoxy, alkoxyalkyl, alkoxyaryl, alkoxyheteroaryl, alkenyloxy, alkynyloxy, cycloalkyloxy, cycloalkenyloxy, heterocycloalkyloxy, heterocycloalkenyloxy, aryloxy, heteroaryloxy, arylaikyl, heteroarylaikyl, arylalkyloxy, -amino, alkylamino, acylamino, aminoalkyl, arylamino, sulfonyl, alkylsulfonyl, arylsulfonyl, aminosulfonyl, aminoalkyl, alkoxyalky, -COOH, C(O)OR5, -COR5, -SH, -SR5, -OR6and acvi:

L<sup>1</sup> and L<sup>2</sup> are the same or different and independently C<sub>1</sub>–C<sub>5</sub> alkyl, which may be optionally substituted with one or more substituents independently selected from the group consisting of: halogen; =O; =S; -CN; -NO<sub>2</sub>; -CF<sub>3</sub>, -OCF<sub>3</sub>, alkyl, alkoxy, acylamino and alkylamino;

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W is selected from the group consisting of a single bond, -O-, -S-, -S(O)-, -S(O)<sub>2</sub>-, -N(R<sup>9</sup>)-, -C(O)N(R<sup>9</sup>)-, -SO<sub>2</sub>N(R<sup>9</sup>)-, N(R<sup>9</sup>)C(O)-, N(R<sup>9</sup>)SO<sub>2</sub>-, and -N(R<sup>9</sup>)-C(O)-N(R<sup>10</sup>)-;

c) L=Cy-(CH<sub>2</sub>)m-W-

Wherein,

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Cy is C<sub>1</sub>-C<sub>15</sub> alkyl, aminoalkyl, heterocycloalkyl, cycloalkyl, aryl, aryloxy or heteroaryl any of which may be optionally substituted one or more substituents independently selected from the group consisting of: : halogen, =O, =S, -CN, -NO<sub>2</sub>, -CF<sub>3</sub>, -OCF<sub>3</sub>, alkyl, alkenyl, haloalkyl, haloalkenyl, haloalkynyl, heteroalkyl, cycloalkyl, cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl. hydroxy, hydroxyalkyl, alkoxy, alkoxyalkyl, alkoxyaryl, alkoxyheteroaryl, alkenyloxy, cycloalkyloxy. cycloalkenyloxy. heterocycloalkyloxy. heterocycloaikenyloxy, aryloxy, heteroaryloxy, arylaikyl, heteroarylaikyl, arylalkyloxy, -amino, alkylamino, acylamino, aminoalkyl, arylamino, sulfonyl, alkylsulfonyl, arylsulfonyl, aminosulfonyl, aminoalkyl, alkoxyalky, -COOH, C(O)OR5, -COR5, -SH, -SR5, -OR6and acyl:

m is 0, 1, 2, 3, 4 or 5;

W is selected from the group consisting of a single bond, -O-, -S-, -S(O)-, -S(O)<sub>2</sub>-, -N(R<sup>9</sup>)-, -C(O)N(R<sup>9</sup>)-, -SO<sub>2</sub>N(R<sup>9</sup>)-, N(R<sup>9</sup>)C(O)-, N(R<sup>9</sup>)SO<sub>2</sub>-, and -N(R<sup>9</sup>)-C(O)-N(R<sup>10</sup>)-;

d) L=L1-W-L2

L<sup>1</sup> and L<sup>2</sup> are the same or different and independently selected from C<sub>1</sub>-C<sub>5</sub> alkyl, which may be optionally substituted one or more substituents independently selected from the group consisting of: halogen; =O; =S; -CN; -NO<sub>2</sub>; -CF<sub>3</sub>, -OCF<sub>3</sub> alkyl, alkoxy, acylamino, alkylamino;

W is selected from the group consisting of a single bond, -O-, -S-, -S(O)-, -S(O)<sub>2</sub>-, -N(R<sup>9</sup>)-, -C(O)N(R<sup>9</sup>)-, -SO<sub>2</sub>N(R<sup>9</sup>)-, N(R<sup>9</sup>)C(O)-, N(R<sup>9</sup>)SO<sub>2</sub>-, and -N(R<sup>9</sup>)-C(O)-N(R<sup>10</sup>)-;

 $R^9$  and  $R^{10}$  are the same or different and are independently selected from H,  $C_1$ - $C_6$  alkyl,  $C_4$ - $C_9$  cycloalkyl,  $C_4$ - $C_9$  heterocycloalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl; and acyl;

Z is a single bond or is selected from -CH<sub>2</sub>-, -CH<sub>2</sub>CH<sub>2</sub>-, -CH=CH-, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, unsubstituted or substituted with one or more substituents independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl; or a pharmaceutically acceptable salt thereof.

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2. A compound of claim 1 wherein Z is a bond,  $-CH_{2^-}$ ,  $-CH_2CH_{2^-}$ , or -CH=CH-,  $C_3-C_6$  cycloalkyl, and Z is attached at ring position 5 or 6.

3. A compound of claim 1 or 2 wherein Z is -CH=CH-, and is attached at ring position

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- 4. A compound of any one of claims 1 to 3 wherein  $R^3 = H$ .
- 5. A compound of any one of claims 1 to 4 wherein X and Y = H.

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- 6. A compound according to any one of claims 1 to 5 wherein R<sup>4</sup> = H.
- 7. The compound according to any one of claims 1 to 6 wherein R<sup>1</sup> is selected from the group consisting of: H, hydroxyalkyl, alkyl, arylalkyl, heteroarylalkyl, alkoxyalkyl, aminoalkyl, and heterocycloalkyl, each of which may be unsubstituted or substituted.
- 8. The compound according to any one of claims 1 to 7 wherein R¹ is selected from the group consisting of: H; methyl; (pyridin-2-yl)methyl; (pyridin-3-yl)methyl; 2-hydroxy-ethyl; 2-(pyridin-2-yl)ethyl; 2-(pyridin-3-yl)ethyl; 2-phenyl-ethyl; 2-carboxy-ethyl; 2-(morpholin-4-yl)-ethyl; 2-(piperidin-1-yl)-ethyl; 2-(pyrollidin-1-yl)-ethyl; 2-diethylamino-ethyl; propyl; 2,3-di-hydroxy-propyl; 3-hydroxy-propyl; 3-methoxy-propyl; 3-isopropoxy-propyl; 2,2-dimethyl-propyl; 3-dimethylamino-propyl; 3-dimethylamino-2,2-dimethyl-propyl; 3-(2-oxo-pyrollidin-1-yl)-propyl; 3-(morpholin-4-yl)-propyl; 3-(imadazol-1-yl)-propyl; 3-(4-methyl-piperidin-1-yl)-propyl; 3-(pyrollidin-1-yl)-propyl; 4-dimethylamino-butyl; 5-hydroxy-pentyl; allyl; benzyl; 3,4,5-trimethoxybenzyl.

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- 9. A compound according to any one of claims 1 to 8 wherein R<sup>2</sup> is selected from the group consisting of H, alkyl, arylalkyl, aryl, heteroaryl, heteroalkyl, cycloalkyl, each of which may be unsubstituted or substituted.
- 10. A compound according to any one of claims 1 to 9 wherein R² is,: H; methyl; benzylamino-methyl; dibenzylamino-methyl; [2-(4-fluoro-phenyl)-acetylamino]-methyl; [2-(4-methoxy-phenyl)-acetylamino]-methyl; 4-methoxy-benzylamino-methyl; benzyloxy-methyl; phenylacetylamino-methyl; 1-amino-2-phenyl-ethyl; 2-benzylamino-ethyl; 2-(3-methoxy-phenyl)-ethyl; 2-(pyridin-3-yl)ethyl; 2-(2-phenoxyacetylamino)-ethyl; 2-benzylamino-ethyl; 2-phenyl-ethyl; isopropyl; 2-phenyl-propyl; 3-phenyl-propyl;
  - 3-phenoxy-propyl; 3-(1H-indol-3-yl)-propyl; 4-methoxy-phenyl; 4-fluoro-phenyl; 4-

benzyloxy-3-methoxy-phenyl; isobutyl; cyclohexyl; octyl; benzyl; pyridin-2-yl; pyridin-4-yl; thiophen-3-yl; benzylsulfanyl, and 2-phenylmethansulfanyl.

11. The compound of claim 1 wherein the compound is selected from compounds, and their pharmaceutically acceptable salts, selected from the group consisting of

N-Hydroxy-3-[1-(3-hydroxy-propyl)-2-(2-phenyl-propyl)-1*H*-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-[1-(3,4,5-trimethoxybenzyl)-2-(2-phenyl-ethyl)-1*H*-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-[2-(4-benzyloxy-3-methoxy-phenyl)-1-methyl-1*H*-benzimidazole-5-yl]-acrylamide

N-Hydroxy-3-[2-(4-benzyloxy-3-methoxy-phenyl)-1-(3-hydroxy-propyl)-1*H*-benzimidazole-5-yl]-acrylamide

*N*-Hydroxy-3-[1-(2-hydroxy-ethyl)-2-(4-methoxy-phenyl)-1*H*-benzimidazole-5-yl]-acrylamide

*N*-Hydroxy-3-[1-(2,3-hydroxy-propyl)-2-(4-methoxy-phenyl)-1*H*-benzimidazole-5-yl]-acrylamide

*N*-Hydroxy-3-[2-(4-benzyloxy-3-methoxy-phenyl)-1-(2,3-hydroxy-propyl)-1*H*-benzimidazole-5-yl]-acrylamide

*N*-Hydroxy-3-[1-(2,3-hydroxy-propyl)-2-(2-phenylethyl)-1*H*-benzimidazol-5-yl]-acrylamide

N-Hydroxy-3-[1-(2,3-hydroxy-propyl)-2-(2-pyridyl)-1H-benzimidazol-5-yl]-acrylamide

N-Hydroxy-3-[1-(2-hydroxy-ethyl)-2-(4-pyridyl)-1H-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-[1-(3-hydroxy-propyl)-2-(4-pyridyl)-1*H*-benzimidazol-5-yl]-acrylamide

N-Hydroxy-3-[1-(3-pyridylmethyl)-2-(2-phenylethyl)-1*H*-benzimidazol-5-yl]-acrylamide

N-Hydroxy-3-[1-(3-hydroxy-propyl)-2-(2-pyridyl)-1H-benzimidazol-5-yl]-acrylamide

N-Hydroxy-3-[1-(3-hydroxy-propyl)-2-phenethyl-1*H*-benzimidazol-5-yl]-acrylamide

N-Hydroxy-3-[1-(3-methoxy-propyl)-2-phenethyl-1H-benzimidazol-5-yl]-acrylamide

N-Hydroxy-3-(2-phenethyl-1-(pyridin-2-yl)methyl-1H-benzimidazol-5-yl)-acrylamide

N-Hydroxy-3-[1-(3-Dimethylamino-2,2-dimethyl-proppyl)-2-phenethyl-1*H*-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-[2-phenethyl-1-(2-pyridin-2-yl-ethyl-1*H*-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-[2-Benzyloxymethyl-1-(3-hydroxy-propyl-1*H*-benzimidazl-5yl]-acrylamide

*N*-Hydroxy-3-[1-(3-hydroxy-propyl)-2-thiophen-3-yl-1*H*-benzimidazol-5-yl]-acrylamide

N-Hydroxy-3-[1-(3-hydroxy-propyl)-2-isobutyl-1H-benzimidazol-5-yl]-acrylamide

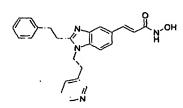
*N*-Hydroxy-3-[2-isobutyl-1-(2-pyridin-2-yl-ethyl)-1*H*-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-[1-(3-hydroxy-propyl)-2-octyl-1*H*-benzimidazol-5-yl]-acrylamide

N-Hydroxy-[2-cyclohexyl-1-(3-hydroxy-propyl)-1*H*-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-(2-isobutyl-1-phenethyl-1*H*-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-(1,2-Diphenethyl-1*H*-benzimidazol-5-yl]-acrylamide



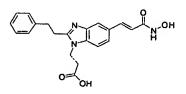
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*N*-Hydroxy-3-[2-Benzyloxymethyl-1-(2-pyridin-3-ethyl)-1*H*-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-[1-(3-Hydroxy-propyl)-2-isobutyl-1*H*-benzimidazol-5-yl]-propionamide

*N*-Hydroxy-3-{1-[3-(2-oxo-pyrrolidin-1-yl)-propyl]-2-phenethyl-1*H*-benzimidazol-5-yl}-acrylamide

*N*-Hydroxy-3-[1-(3-morpholin-4-propyl]-2-phenethyl-1*H*-benzimidazol-5-yl}-acrylamide

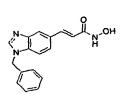


3-[5-(2-Hydrocarbamoyl-vinyl)-2-phenethyl-1*H*-benzimidazol-1-yl]-propionic acid

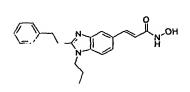
C N N OH

122 N-Hydroxy-3-(1-Benzyl-2-phenethyl-1*H-*benzimidazol-5-yl}-acrylamide

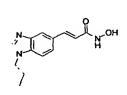
*N*-Hydroxy-3-(1-Benzyl-2-isobutyl-1*H*-benzimidazol-5-yl}-acrylamide



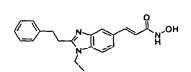
*N*-Hydroxy-3-(1-benzyl-1*H*-benzimidazol-5-yl}-acrylamide



*N*-Hydroxy-3-(2-phenethyl-1-propyl-1*H*-benzimidazol-5-yl}-acrylamide



*N*-Hydroxy-3-(1-propyl-1*H*-benzimidazol-5-yl}-acrylamide



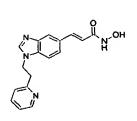
*N*-Hydroxy-3-(1-Ethyl-2-phenethyl-1*H*-benzimidazol-5-yl}-acrylamide

N N OH

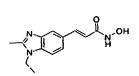
N-Hydroxy-3-(1-Ethyl-1*H*-benzimidazol-5-yl}-acrylamide

1-(3-Hydroxy-propyl)-2-phenethyl-1*H*-benzimidazol-5-carboxylic acid hydroxyamide

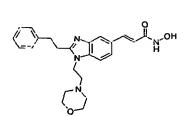
*N*-Hydroxy-3-[2-(2-phenyl-propyl)-1-(2-pyridin-3-yl-ethyl)-1*H*-benzimidazol-5-yl]-acrylamide



*N*-Hydroxy-3-[1-(2-pyridin-2-yl-ethyl)-1*H*-benzimidazol-5-yl]-acrylamide



*N*-Hydroxy-3-(1-Ethyl-2-methyl-1*H*-benzimidazol-5-yl]-acrylamide

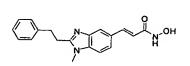


*N*-Hydroxy-3-[1-(2-morpholin-4-yl-ethyl)-2-phenethyl-1*H*-benzimidazol-5-yl]-acrylamide

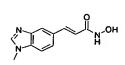
124
N-Hydroxy-3-[2-phenethyl-1-(3,4,5-trimethoxy-benzyl)-1*H*-benzimidazol-5-yl]-propionamide

*N*-hydroxy-3-[1-(3-hydroxy-propyl)-2-isopropyl-1*H*-bezimidazol-5-yl]-acrylamide

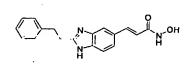
1-(3-Hydroxy-propyl)-1*H*-bezimidazole-5-carboxylic acid hydroxyamide



*N*-Hydroxy-3-(1-methyl-2-phenethyl-1*H*-benzimidazol-5-yl)-acrylamide



 $\it N$ -Hydroxy-3-(1-methyl-1 $\it H$ -benzimidazol-5-yl)-acrylamide



*N*-Hydroxy-3-(2-phenethyl-1*H*-benzimidazol-5-yl)-acrylamide

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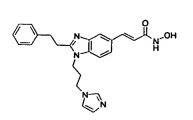
N-Hydroxy-3-(1H-benzimidazol-5-yl)-acrylamide

125 N-Hydroxy-3-[1-methyl-2-(3-phenyl-propyl)-1*H*-benzimidazol-5-yl]-acrylamide

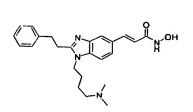
N-Hydroxy-3-(1,2-dimethyl-1H-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-[1-methyl-2-(phenylacetylamino-methyl)-1*H*-benzimidazol-5-yl]-acrylamide

*N*-[5-(2-Hydroxycarbomoyl-vinyl)-1-methyl-1*H*-benzimidazol-2-ylmethyl]-isonicotinamide



*N*-Hydroxy-3-[1-(3-imidazol-1-yl-propyl)-2-phenethyl-1*H*-benzimidazol-5-yl]-acrylamide

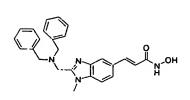


*N*-Hydroxy-3-[1-(4-dimethylamino-butyl)-2-phenethyl-1*H*-benzimidazol-5-yl]-acrylamide

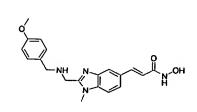
126 N-Hydroxy-3-(3-benzyl)-2-phenethyl-3*H*-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-(3-methyl-2-phenethyl-3*H*-benzimidazol-5-yl]-acrylamide

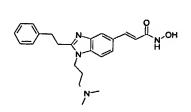
*N*-Hydroxy-3-[2-(benzylamino-methyl)-1-methyl-1*H*-benzimidazol-5-yl]-acrylamide



*N*-Hydroxy-3-{2-[(dibenzylamino)-methyl]-1-methyl-1*H*-benzimidazol-5-yl}-acrylamide



*N*-Hydroxy-3-{2-[(4-methoxy-benzylamino)-methyl]-1-methyl-1*H*-benzimidazol-5-yl}-acrylamide

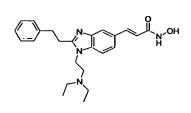


*N*-Hydroxy-3-[1-(3-dimethylamino-propyl)-2-phenethyl-1*H*-benzimidazol-5-yl]-acrylamide

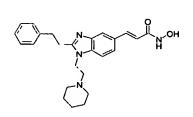
H-OH

127 N-Hydroxy-3-[2-(benzylamino-methyl)-ethyl-1*H*-benzimidazol-5-yl]-acrylamide

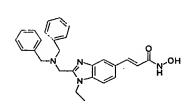
*N*-Hydroxy-3-(2-(benzyl-1-methyl-3-oxo-1*H*-benzimidazol-5-yl)-acrylamide



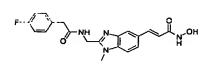
*N*-Hydroxy-3-[1-(2-diethylamino-ethyl)-2-phenethyl-1*H*-benzimidazol-5-yl]-acrylamide



*N*-Hydroxy-3-[2-phenethyl-1-(piperidin-1-yl-ethyl)-1*H*-benzimidazol-5-yl]-acrylamide



 $\it N$ -Hydroxy-3-{2-[(dibenzylamino)-methyl]-1-ethyl-1 $\it H$ -benzimidazol-5-yl}-acrylamide



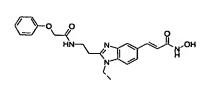
*N*-Hydroxy-3-(2-{[2-(4-fluoro-phenyl)-acetylamino]-methyl}-1-methyl-1*H*-benzimidazol-5-yl)-acrylamide

HN N N OH

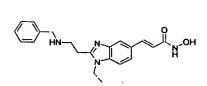
128
N-Hydroxy-3-[1-ethyl-2-(2-phenylacetylamino-ethyl)-1*H*-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-[2-(2-Benzenesulfonylamino-ethyl)-1-ethyl-1*H*-benzimidazol-5-yl]-acrylamide

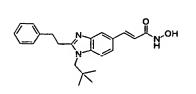
*N*-Hydroxy-3-[2-phenyethyl-1-(2-pyrrolidin-1-ylethyl)-1*H*-benzimidazol-5-yl]-acrylamide



*N*-Hydroxy-3-{1-ethyl-2-[2-(2-phenoxy-acetylamino)-ethyl]-1*H*-benzimidazol-5-yl]-acrylamide



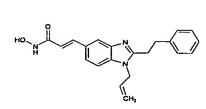
*N*-Hydroxy-3-[2-(2-benzylamino-ethyl)-1-ethyl--1*H*-benzimidazol-5-yl]-acrylamide



*N*-Hydroxy-3-[1-(2,2-dimethyl-propyl)-2-phenethyl-1*H*-benzimidazol-5-yl]-acrylamide

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*N*-Hydroxy-3-[1-(2-hydroxyethyl)-2-phenethyl-1*H*-benzimidazol-5-yl]-acrylamide



*N*-Hydroxy-3-(1-allyl-2-phenethyl-1*H*-benzimidazol-5-yl)-acrylamide

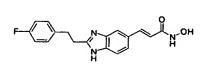
*N*-Hydroxy-3-(1-(3-isoproxy-propyl)-2-phenethyl-1*H*-benzimidazol-5-yl)-acrylamide

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*N*-Hydroxy-3-[2-phenethyl-1-(3-pyrrolidin-1-yl-propyl)-1*H*-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-[1-(3-Dimethylamino-2,2-dimethyl-propyl)-2-(3-phenyl-propyl)-1*H*-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-{1-(3-Dimethylamino-2,2-dimethyl-propyl)-2-[2-(4-fluoro-phenyl)-ethyl]-1*H*-benzimidazol-5-yl]-acrylamide

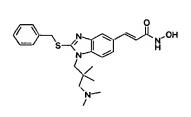


*N*-Hydroxy-3-{2-(4-fluoro-phenyl)-ethyl]-1*H*-benzimidazol-5-yl}-acrylamide

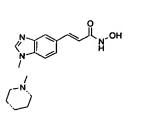
N-Hydroxy-3-[1-(3-Dimethylamino-2,2-dimethyl-propyl)-2-(2-pyridin-3-yl-ethyl)-1*H*-benzimidazol-5-yl]-acrylamide

*N*-Hydroxy-3-[2-(2-pyridin-3-yl-propyl)-1*H*-benzimidazol-5-yl]-acrylamide

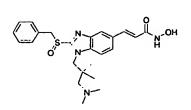
2-[2-Phenethyl-1-(3,4,5-trimethoxy-benzyl)-1*H*-benzimidazol-5-yl]-cyclopropanecarboxylic acid hydroxyamide



*N*-Hydroxy-3-[2-benzylsulfanyl-1-(3-dimethylamino-2-2,dimethyl-propyl)-1*H*-benzimidazol-5-yl]-acrylamide



*N*-Hydroxy-3-[1-(2-piperidin-1-yl-ethyl)-1*H*-benzimidazol-5-yl]-acrylamide

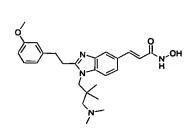


*N*-Hydroxy-3-[1-(3-dimethylamino-2,2-dimethyl-propyl)-2-phenylmethanesulfonyl-1*H*-benzimidazol-5-yl]-acrylamide

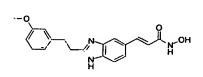
D N OH

N-Hydroxy-3-(2-benzyl-1-ethyl-1*H*-benzimidazol-5-yl)-acrylamide

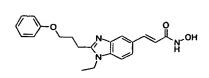
*N*-Hydroxy-3-{1-ethyl-2-[3-(1H-indol-3-yl)-propyl]-1*H*-benzimidazol-5-yl)-acrylamide



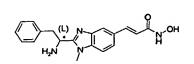
*N*-Hydroxy-3-{1-(3-dimethylamino-2,2-dimethyl-propyl)-2-[2-(3-methoxy-phenyl)-ethyl]-1*H*-benzimidazol-5-yl)-acrylamide



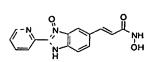
*N*-Hydroxy-3-{2-(3-methoxy-phenyl)-ethyl]-1*H*-benzimidazol-5-yl}-acrylamide



*N*-Hydroxy-3-[1-ethyl-2-(3-phenoxy-propyl)-1*H*-benzimidazol-5-yl]-acrylamide



 $\label{eq:Lamino-2-phenyl-ethyl-1-methyl-1-H-benzimidazol-5-yl]-acrylamide} (L)-N-Hydroxy-3-[2-(1-amino-2-phenyl-ethyl)-1-methyl-1$H-benzimidazol-5-yl]-acrylamide$ 



*N*-Hydroxy-3-(3-oxy-2-pyridin-2-yl-1*H*-benzimidazol-5-yl]-acrylamide

N-Hydroxy-3-(2-{[2-(4-methoxy-phenyl)acetylamino]-methyl}-1-methyl-1H-benzimidazol-5-yl)-acrylamide

2-(1-Methyl-2-phenethyl-1H-benzimidazol-5-yl)cyclopropanecarboxylic acid hydroxyamide

- 12. A pharmaceutical composition including a compound according to any one of claims 1 to 11 and a pharmaceutically acceptable diluent, excipient or carrier.
- Use of a compound according to any one of claims 1 to 11 in the preparation of a 5 13. medicament for the treatment of a disorder caused by, associated with or accompanied by disruptions of cell proliferation and/or angiogenesis.
  - 14. A use according to claim 13 wherein the disorder is a proliferative disorder.

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- 15. A use according to claim 14 wherein the proliferative disorder is cancer.
- A method of treatment of a disorder caused by, associated with or accompanied 16. by disruptions of cell proliferation and/or angiogenesis in a patient the method including administration of a therapeutically effective amount of a compound according to any one of claims 1 to 11 to the patient.
- 17. A method according to claim 16 wherein the disorder is a proliferative disorder.
- 20 18. A method according to claim 16 wherein the disorder is cancer.
  - Use of a compound according to any one of claims 1 to 11 or a pharmaceutical 19. composition according to claim 12 to modify deacetylase activity.
- A use according to claim 19 wherein the deacetylase activity is histone 25 20. deacetylase activity.
  - A use according to claim 19 wherein the deacetylase activity is class I histone 21. deacetylase activity.

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- 22. A use according to claim 20 or 21 wherein the histone deacetylase is HDAC1.
- 23. A use according to claim 20 or 21wherein the histone deacetylase is HDAC8.
- 5 24. A method of treatment of a disorder that can be treated by the inhibition of histone deacetylase in a patient including administration of a therapeutically effective amount of a compound according to any one of claims 1 to 11 to the patient.
- 25. A method according to claim 24 wherein the disorder is selected from the group 10 consisting of Anti-proliferative disorders (e.g. cancer); Neurodegenerative diseases including Huntington's Disease, Polyglutamine disease, Parkinson's Disease, Alzheimer's Disease, Seizures, Striatonigral degeneration, Progressive supranuclear palsy, Torsion dystonia, Spasmodic torticollis and dyskinesis, Familial tremor, Gilles de la Tourette syndrome, Diffuse Lewy body disease, Progressive supranuclear palsy, Pick's disease, Intracerebral haemorrhage, Primary lateral sclerosis, Spinal muscular atrophy, 15 Amyotrophic lateral sclerosis, Hypertrophic interstitial polyneuropathy, pigmentosa, Hereditary optic atrophy, Hereditary spastic paraplegia, Progressive ataxia and Shy-Drager syndrome; Metabolic diseases including Type 2 diabetes; Degenerative Diseases of the Eye including Glaucoma, Age-related macular degeneration, Rubeotic glaucoma; Inflammatory diseases and/or Immune system disorders including Rheumatoid 20 Arthritis (RA), Osteoarthritis, Juvenile chronic arthritis, Graft versus Host disease, Psoriasis, Asthma, Spondyloarthropathy, psoriasis, Crohn's Disease, Inflammatory bowel disease, Colitis Ulcerosa, Alcoholic hepatitis, Diabetes, Sjoegrens's syndrome, Multiple Sclerosis, Ankylosing spondylitis, Membranous glomerulopathy, Discogenic pain, 25 Systemic Lupus Erythematosus; Disease involving angiogenesis including cancer, psoriasis, rheumatoid arthritis; Psychological disorders including bipolar disease, schizophrenia, mania, depression and dementia; Cardiovascular Diseases including Heart failure, restenosis and arteriosclerosis; Fibrotic diseases including liver fibrosis, cystic fibrosis and angiofibroma; Infectious diseases including Fungal infections, such as 30 Candida Albicans, Bacterial infections, Viral infections, such as Herpes Simplex, Protozoal infections, such as Malaria,-Leishmania infection, Trypanosoma brucei infection. Toxoplasmosis and coccidiosis and Haematopoietic disorders including thalassemia, anemia and sickle cell anemia.
- 26. A method for inhibiting cell proliferation including administration of an effective amount of a compound according to any one of claims 1 to 11.

27. A method of treatment of a neurodegenerative disorder in a patient including administration of a therapeutically effective amount of a compound according to any one of claims 1 to 11 to the patient.

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28. A method according to claim 27 wherein the neurodegenerative disorder is Huntington's Disease.

29. 10

- A method of treatment of an inflammatory disease and/or immune system disorder in a patient including administration of a therapeutically effective amount of a compound according to any one of claims 1 to 11 to the patient.
- 30. A method according to claim 29 wherein the inflammatory disease and/or immune system disorder is rheumatoid arthritis.

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- 31. A method according to claim 29 wherein the inflammatory disease and/or immune system disorder is systemic lupus erythematosus.
- 32. A method for measuring an acetylated histone concentration in a biological sample using an enzyme-linked immunosorbant assay, the enzyme-linked immunosorbant assay 20 including a combination of a primary capture antibody, or a portion thereof, and secondary detection antibody, or a portion thereof.

33. 25

A method according to claim 32, wherein the primary capture antibody is selected from the group consisting of: an anti-H3 monoclonal antibody, an anti-acetylated H3 polyclonal antibody, a goat anti-H3 polyclonal antibody, a goat anti-acetylated H3 polyclonal antibody and a combination thereof.

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- A method according to claim 32 or 33, wherein the secondary detection antibody is 34. selected from the group consisting of: an anti-H3 monoclonal antibody, an anti-acetylated H3 polyclonal antibody, a goat anti-H3 polyclonal antibody, a goat anti-acetylated H3 polyclonal antibody and a combination thereof.
- 35. A method according to claim 32, wherein the primary capture antibody is a mouse anti-H3 monoclonal antibody and the secondary detection antibody is a rat anti-acetylated 35 H3 polyclonal antibody.

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- 36. A method for identifying the pharmacological effect of a histone deacetylase inhibitor in a cell, the method including the steps of:
  - a) providing a cell that has been treated with a histone deacetylase inhibitor;
- b) measuring the acetylated histone concentration in the cell by a method according to any one of claims 32 to 35; and
- c) comparing the acetylated histone concentration with the acetylated histone concentration of a control sample.
- 37. A method according to claim 36, wherein the control sample is derived from a cell that has not been treated with a histone deacetylase inhibitor.
  - 38. A method according to claims 36 or 37, wherein the cell is a tumour cell.
- 39. A method for identifying the pharmacological effect of a histone deacetylase inhibitor in a subject, the method including the steps of:
  - a) obtaining a biological sample from a subject that has been treated with a histone deacetylase inhibitor;
  - b) measuring the acetylated histone concentration in the biological sample by a method according to any one of claims 32 to 35; and
  - c) comparing the acetylated histone concentration with the acetylated histone concentration of a control sample.
    - 40. A method according to claim 39, wherein the control sample is a biological sample derived from a subject that has not been treated with a histone deacetylase inhibitor.
    - 41. A method according to any one of claims 32 to 35 or 39 to 40, wherein the biological sample is selected from the group consisting of tissue, blood, serum, plasma, urine, saliva and a combination thereof.
- 42. A method according to claim 36 or claim 37, wherein the histone deacetylase inhibitor includes a compound according to any one of claims 1 to 11.